

1077-60-1206

**Jody Trapier Shipp\*** (jodytshipp@gmail.com), 4773 Gainsborough Dr, Fairfax, VA 22032.

*Mean-reverting pricing models.* Preliminary report.

We examine changes to a standard pricing model used in finance and economics. This model is a mean-reverting (Ornstein-Uhlenbeck) stochastic process where fluctuations in supply and demand occur but a drift pushes the price back towards a mean value, giving rise to a Gaussian price distribution.

Hysteresis refers to memory-dependent or non-reversible effects. For example, an agent may switch their investment position due to a price change but, in the presence of non-zero transaction costs, they will not immediately switch back if the price change reverses. We add hysteretic economic agents to an Ornstein-Uhlenbeck process and numerically simulate the system using the Euler-Maruyama method. We then compare the statistics of Ornstein-Uhlenbeck processes with and without hysteresis-type effects. (Received September 17, 2011)